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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,041	06/12/2007	Ashok Kumar Gupta	U 016370-1	7898

140 7590 08/20/2008

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EXAMINER	
CUTLIFF, YATE KAI RENE	
ART UNIT	PAPER NUMBER
1621	
MAIL DATE	DELIVERY MODE
08/20/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/585,041	GUPTA ET AL.	
	Examiner	Art Unit	
	YATE' K. CUTLIFF	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 6-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 6-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 1 - 4 and 6 - 11 are pending.

Claim 5 has been canceled

Claims 1 – 4 and 6 – 11 are rejected.

Claim Objections

2. Claim 1 is objected to because of the following informalities: in line 9, the term "glycerine" is used instead of "glycerol", which is inconsistent with line 8. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. In line 2 of claim 3, Applicant list "distillation" as one of the group of absorbents used in the process. However, distillation is not an absorbent but a separation process.

Response to Amendment

In the Specification:

6. The amendments to the Specification in the response filed May 19, 2008 are acknowledged and entered.

In the Claims:

7. The amendments to claims 1 - 4 and 6 – 11, in the response filed May 19, 2008 are acknowledged and entered.

Response to Arguments

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Applicant's arguments, see page 7 lines, filed May 19, 2008, with respect to claims 1-11, with regard to the teachings of Yoo et al. (US 2005/0080280) in vies of Basu et al (US 5,525 126), have been fully considered and are persuasive. The Basu et al reference as bee withdrawn. However, the Applicant's arguments filed May 19, 2008 with regard to Claims 1- 4 and 6 -11 being rejected under 35 U. S.C. 103(a) over Yoo, (US 2005/0080280 corresponds to WO 03//066567) in view of Yean et al. (Applied Organometallic Chemistry, 2000, vol. 14) have been fully considered but they are not persuasive.

11. Claims 1 - 4 and 6 - 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoo, (US 2005/0080280 corresponds to WO 03//066567) in view of Yean et al. (Applied Organometallic Chemistry, 2000, vol. 14) Ciaudelli (US 4,567,037), and Ma et al. (BioresourcesTechnology, Vol. 70 pp 1) for the reasons given in the previous Office Action mailed November 19, 2007.

12. Claims 1-4 and 6 – 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoo, (US 2005/0080280 corresponds to WO 03//066567) in view of Yean et al. (Applied Organometallic Chemistry, 2000, vol. 14), Caiudelli (US 4,567,037), Ma et al. (Bioresources Technology, Vol. 70 pp 1) and Phelips et al. (US 6,962,968).

13. The rejected claims cover, inter alia a process for preparing of fatty acid alkyl esters suitable for use a biodiesel the process steps include the use of an

Organometallic catalytic compound of tin and purifying the fatty acid alkyl ester product of steps a through e by water wash and treating with a basic absorbent.

14. Yoo, as set out in the previous Office Action of November 19, 2007, discloses a process for the continuous production of alkyl ester fatty acid suitable for a biodiesel fuel by the transesterification of animal or vegetable oil. The reaction process uses organometallic catalytic compound that is a tin oxide. The reaction temperature ranges and pressures ranges of Yoo overlap with the Applicant's claimed temperature and pressure ranges.

Yoo fails to explicitly disclose the use the molar ratio of the fatty acid to glyceride of 3:1 to 30:1; the use of the absorbents of bauxite, alumina and silica-alumina; the use of dibutyltin oxide and dioctyltin oxide as the tin containing catalyst; and the claimed viscosity.

However, Yean discloses that dibutyltin oxide and dioctyltin oxide are useful as catalyst in transesterification reactions. (see page 305, column 2 last paragraph). The fatty acid triglyceride used in Yean was a tripalmitin. Table 1, catalyst 15 and 24, of Yean discloses dibutyltin oxide and dioctyltin oxide catalyst and product composition. Further, the reaction of Yean is carried out at 70°C and a pressure of 1 bar. Additonally, Ciaudelli discloses an esterification process that uses dibutyltin oxide as the catalyst.

Further, with regard to the use of absorbents to purify the fatty acid alky ester after water wash, Phelps et al. discloses that basic alumina, carbon, silica or molecular sieves are common acid absorbents that are used to remove acid impurities from macrocyclic oligoesters.

The process of Yoo teaches a process wherein an alkylester of a fatty acid can be produced by a reaction that uses an organometallic tin catalyst, a lower alcohol and animal fat and/or vegetable oil. While Yean discloses that dibutyltin oxide catalyst and dioctyltin oxide catalyst are useful in transesterification reactions between an alcohol and triglyceride. Further, Claudelli discloses that dibutyltin oxide is useful as a catalyst in an esterification reaction. Lastly, Phelps et al. teaches that the use of alumina type of absorbents to remove impurities form oligoesters. The only differences between the clamed invention and the references are the combination and order of the "old refining steps for the preparation of the fatty acid alkyl ester" in the processing sequence. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to prepare a biodiesel as suggested by Yoo in view of Yean et al and purify the water washed crude fatty acid alkyl ester with a treatment of a basic absorbent as suggested by Phelps et al. to produce an fatty acid alkyl ester that is suitable for use as biodiesel

Therefore, all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. KSR International Co. v. Teleflex Inc., 550 U.S. ___, 82 USPQ2d 1385 (U.S. 2007).

With regard to the use of bauxite, since the absorbent is an aluminum ore, the use of it as a base absorbent in view of teachings of Phelps et al. would have been in

the purview of a skilled artisan. Therefore, this limitation is deemed to be obvious absent a showing of unexpected results.

A reference is good not only for what it teaches by direct anticipation but also for what one of ordinary skill in the art might reasonably infer from the teachings. *(In reOpprecht* 12 USPQ 2d 1235, 1236 (Fed Cir. 1989); *In re Bode* 193 USPQ 12 (CCPA) 1976). In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35USC 103(a). From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Response to Argument:

15. Applicant respectfully asserts that Yoo fails to disclose a process where the catalyst used is a neutral catalyst. However, the catalyst used by Yoo is an organometallic tin oxide catalyst and Applicant, in claim 1 states that the catalyst is an organometallic catalytic compound of tin. In response to Applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the catalyst being a neutral catalyst) is not recited in the rejected claim(s). Although the claims are interpreted in light of the

specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Further, Applicant states that the reaction of Yoo is carried out at a lower temperature and pressure then claimed. In response, Applicant is reminded that where claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exist. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976).

Applicant respectfully asserts that Yean uses pure tripalmitin, while the Applicant's process uses natural vegetable oil. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., natural vegetable oil) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Further, Applicant states that the reaction of yean is carried out a lower pressure and temperature than the claimed process. However, Yean's reaction temperature of 70°C and a pressure of 1 bar overlap with the Applicant's claimed temperature of between 70 - 300°C and a pressure of 1-30 bar. Where claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exist. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976).

Lastly, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the

claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the suggestion to combine the references is in the knowledge generally available to one ordinary skill in the art at the time of the claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YATE' K. CUTLIFF whose telephone number is (571)272-9067. The examiner can normally be reached on M-TH 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel M. Sullivan can be reached on (571) 272 - 0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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